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Intelligence Information Special Report

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COUNTRY USSR

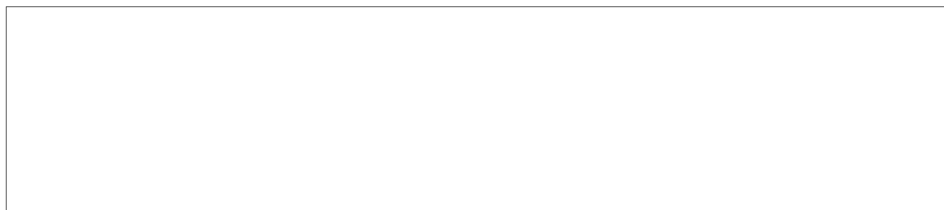
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SUBJECT

MILITARY THOUGHT (USSR): The Structural Components of
Low-Level Bridges of Industrial Manufacture

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The Structural Components of Low-Level Bridges of
Industrial Manufacture
by
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This timely question has been raised in the military press, specifically in an article by Lieutenant Colonel I. Kuznetsov and Major N. Lyubchenko.* The authors correctly point out the impossibility and inadvisability of the continued utilization of the organic pontoon bridge means of large units and formations in support of river crossings. With the help of organic army and front pontoon bridge means, it is possible to carry out for an army at best two or three crossings each across two adjacent rivers of average width. It is entirely inadvisable and uneconomical to utilize the pontoon bridge parks of engineer troops for carrying out crossings over water obstacles in the depth of an operational disposition of troops.

In recent years, the engineer troops have shortened significantly the time needed for replacing floating bridges with low-level bridges by mechanizing the process of constructing them from components prepared beforehand. The great majority of units of engineer troops construct low-level bridges at the rate of 20 linear meters an hour while working from one bank, and from 30 to 35 linear meters while working from two banks.

Unfortunately, the capabilities of troops in preparing components are only one-fourth (as was correctly mentioned in the article) of the capabilities in constructing bridges. An increase in the number of supporting subunits does not solve the problem, either. Furthermore, the transport of existing components of wooden bridges requires a large number of transport vehicles which are not provided for by any tables of organization or calculations.

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*Collection of Articles of the Journal 'Military Thought', 1966, No. 2 (78).



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In preparing a theater of military operations for war and in increasing the constant combat readiness of engineer units, bridge components are prepared in peacetime and are concentrated in advance in designated areas or in troop dispositions. Considerable resources are expended for lumber and for the manufacture of structural components which can be stored for only four to five years, after which they must be replaced.

The authors are fully justified in their concern about the need for centralized production of precast demountable structural components for large-span bridges utilizing fiberglass, plywood elements and low-alloy steels.

In determining the tactical-technical requirements for these structural components, it is necessary, in our opinion, in addition to the requirements presented by the authors, to provide for the possibility of prolonged storage (eight to ten years) and of transporting at least one bridge span nine to 12 linear meters long on one motor vehicle (without a pole trailer).

It is necessary to pay particular attention to the design of piers for bridges erected on rivers with silty bottoms and sticky sand, which is characteristic of the estuarial sections of rivers in the Western Theater of Military Operations. Thus, when constructing low-level bridges on the Oder and the Vistula Rivers even with spans four to 4.5 meters in length, it is necessary to drive in piled piers 11 to 13 meters long. In cases where the span is longer, the loads on the piers will be even greater.

In our opinion, further study is required to determine if it is necessary for these bridge components to meet the requirement of repeated assembly over several water barriers during an operation. The minimum of two or three low-level bridges built in the zone of each army will definitely be used subsequently by the front. Thus, to take down these bridges or replace them with similar ones is quite inadvisable. It is another matter in peacetime when the repeated assembly of bridges from such components is carried out during troop combat training.

In light of the foregoing, it appears to us that we should take steps to speed up the designing, the testing in the troops, and the industrial manufacture of structural components of low-level bridges.

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